



AEW

“Empowering Power”
A Waste & Energy Solution

www.abundantenergyworks.com

Abundant Energy Works Overview

Business:	Developer of micro renewable energy utilizing environmentally sustainable technologies. Focus is on gasification of waste to generate steam to produce electricity and thermal energy
Technology:	Suspended air micro gasification – patent and patent pending technologies encompassing both the core technology and the micro-cchp (combined cooling, heat and power) energy system
Project Pipeline:	Completed controlled beta of units in the field. Systems placed at indoor agricultural and residence facilities. Currently pursuing several projects in various stages of product development representing multiple ton of waste per day via multiple micro-cchp systems operating in parallel. System signatures of 1 MW and under are AEW's target pipeline.
Ownership:	Privately owned
Headquarters:	Elkhart, Indiana USA



Mission

“Provide an environmentally and economically sustainable alternative to the landfilling and incineration of waste - converting it through densification/combustion/gasification into clean renewable electricity and/or thermal energy”

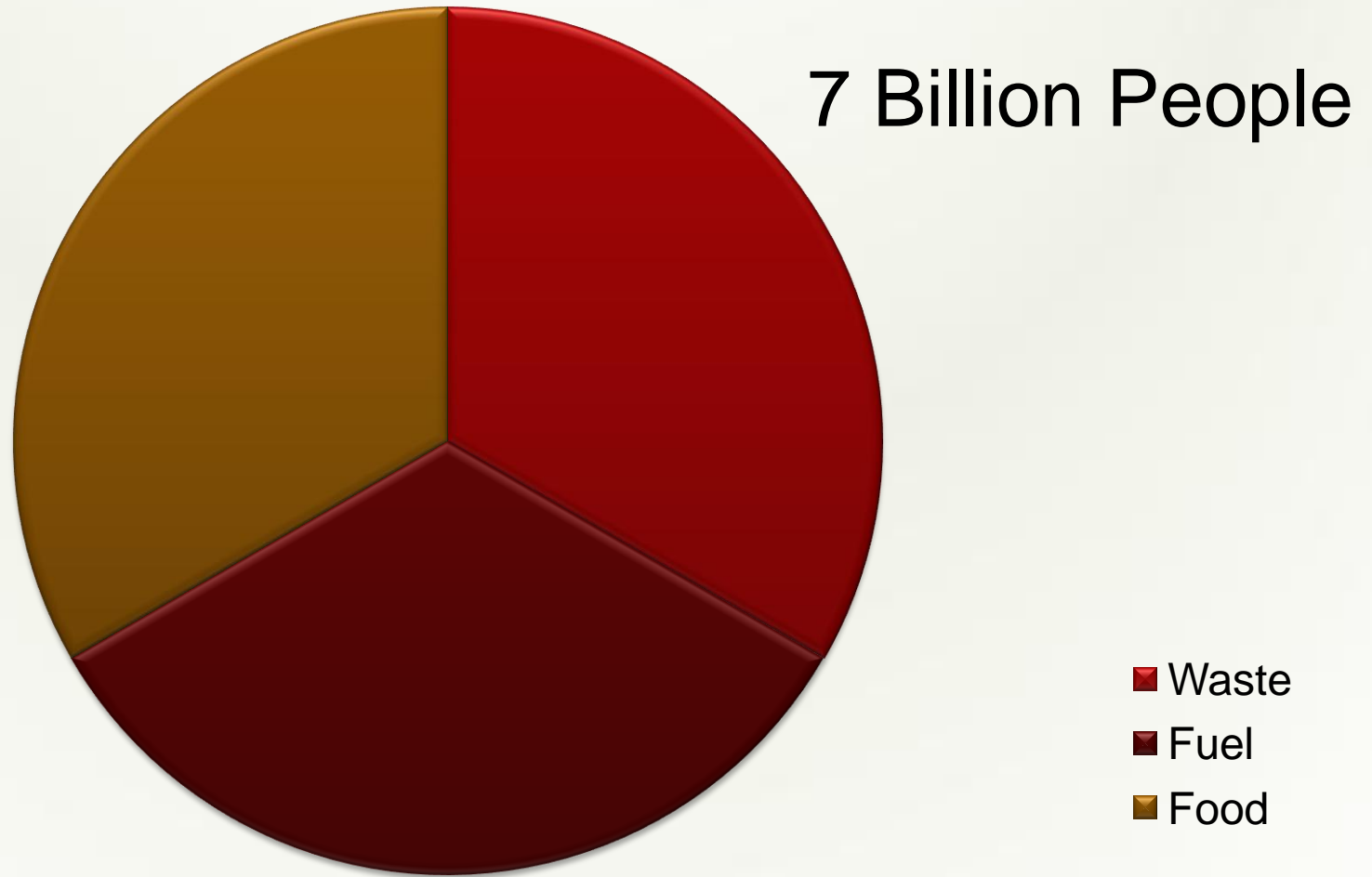
Vision

“Endless Endearment – Value the Individual”

“Endless Energy”

“Endless Economy”

World View



Access to Power

3.5 Billion People have no practical “Access” to Power



Access to Waste Solutions

2.5 Billion People have no Waste handling services/solutions



Access to Food/Water Solutions

1.5 Billion People have no safe available drinking water
4.5 Billion People earn \leq \$2 USD per day



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World View Trends

10 Billion People in 40 years (1 generation)

- Housing
- Power
- Food/Water



Average age of farmer now over 60 years

3rd world cultures becoming 2nd and 1st tier cultures

- Eating more meat and eggs
- Greater demand on “grains”

Grids have “outlived” their “estimated lives”
Interactive – publish/subscribe model



World View Trends – Convergence

Arab “Spring”

Internet = Democratization Vehicle

Failure of “Governments/Institutions”

Apple/Google/Facebook/Wireless

24 hour news – “immediate”

Currency Concern

Green/Sustainable/Clean/Renewable

Waste Not Want Not!

World's energy “consumption” = 500 quadrillion BTUs
(equivalent of 4 trillion gallons of gasoline!)

Of this annual “consumption”, over 50% is LOST to
waste heat – never really “utilized” at all!

Annually, the world is wasting the equivalent of over 2
trillion gallons of gasoline to waste - heat loss.

Waste Not Want Not - More!

Any car engine mechanic knows that the internal combustion engine is only 20% - 25% efficient - again heat loss. 75% - 80% is wasted energy!

Electricity production results in almost as much waste - up to 70% - resulting in only 30% efficiency.

We are wasting 50% to 80% of our energy – heat loss.

How truly “effective” are our current systems/processes? Are they the correct ones looking forward?

A Change is in the air!

Is it time to change our thinking?

AEW – Computer Analog



AEW – Personal Power Plant



AEW – Personal Power Plant

The World's 1st Bio-regenerator

Uses “suspended air” technology

- complete combustion
- little to no emissions

Decentralized

Any biomass/bio-combustible fuel

- waste (even bio-solids)
- animal waste
- trash
- energy crops

Micro-steam to electricity



AEW – Personal Power Plant

BTUs for heating

Hot Water

Heat Absorption Chilling

- air conditioning
- refrigeration

Atmospheric Water Harvesting

- Clean drinking water
- Dehumidification

Hydroponics / Aquaponics

- Indoor Food Growth
- 24/7/365



Why Engage AEW?

- World class development team with over 25 years of experience
- We can deliver both a near and long term renewable energy solution:
 - Up to 25 kw “Personal Power” waste to energy units
 - Up to 1MW “Power Plant from Waste” waste to energy units
 - 10-12 MW – 200 tons/day waste to energy centers
 - 250 MW – 5000 tons/day waste to energy facilities
- Global partnerships with industry leaders in engineering, construction and operations
- We can begin waste and site analysis immediately
- Have resources in to mobilize quickly



Green is Abundant!

Abundantenergyworks.com
Steamenginepower.com

Key Benefits

- Safely dispose of any waste/biomass, including MSW, tires, industrial wastes, medical waste, hazardous waste and biomass
- Converts over 80% of the energy “in the waste” into useable power
- One ton of MSW can produce approximately one MWh of electric power
- Air emissions are comparable to those from a natural gas power plant, including GHG

Key Components of WTE Readiness

- › Determine location and deployment of “Personal Power” units
- › Waste logistics/transportation analysis
- › Transmission & distribution interconnection analysis
- › Economic modeling and financial analysis
- › Identify suitable site(s) for large scale waste to energy facilities
- › Waste feedstock analysis and system optimization
- › Preliminary facility engineering and design
- › Equipment configuration and specification
- › Project planning and resources/logistics assessment
- › Legal and permitting review

Project Scope – How Much Power/Where

- Waste tonnage per day per location?
- Waste to Energy plants – sites?
- Plant sizing in MW - 40MW - 50MW?
- Total capital cost required?
- Development and construction cycle to start-up?
- Steam or electric-driven seawater desalination units can be added to produce potable water for local use

Additional Points of Discussion

- WTE Readiness Analysis - Study
- Government or Business support
- Timing and process items
- Waste logistics, existing agreements, etc.
- Location for facilities
- Financing guarantees

Environmental Services



AEW can offer waste transportation/distribution and environmental services

Solar Energy



AEW can offer solar power technology as part of our services



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Engineering/Construction



AEW can provide performance guarantees as required by the installation

Transmission and Distribution – T&D



AEW can offer transmission and distribution services as part of an installation

Freshwater/Seawater Desalination Plant



AEW can offer fresh water/desalinization technology as part of our services
Powering the water subsystem via steam or electricity from the WTE facility